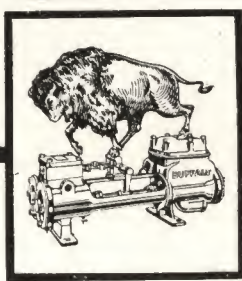


# Buffalo Steam Pump Co.

BUFFALO, N.Y., U.S.A.

## Condensation Return Pumps



Bulletin

No. 274

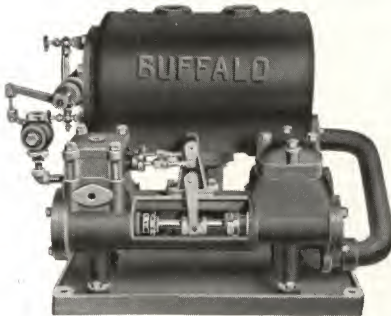


Fig. 712

Size,  $4\frac{1}{2} \times 2\frac{3}{4} \times 4$

## Steam Driven Outfits

## Electric Driven Outfits



Fig. 1207



B U F F A L O P U M P S



## Buffalo Duplex Automatic Feed Pumps and Receivers

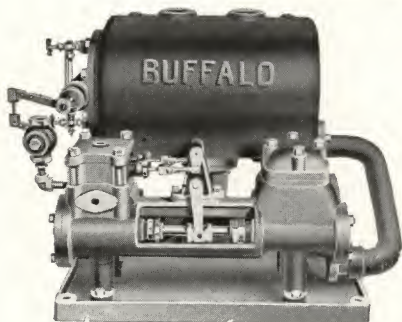


Fig. 712

Size,  $4\frac{1}{2} \times 2\frac{3}{4} \times 4$

*(Note outline dimensions on next page)*

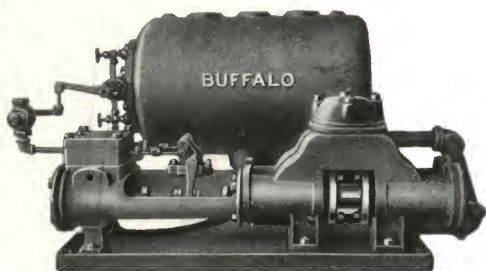


Fig. 714

Size,  $4\frac{1}{2} \times 2\frac{3}{4} \times 4$

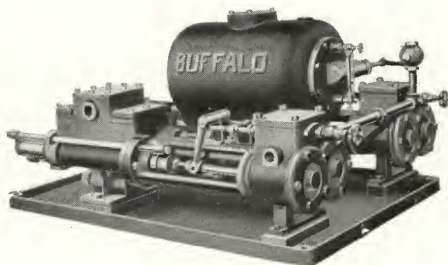


Fig. 715

Special Pump and Receiver outfit.  
Prices on application.

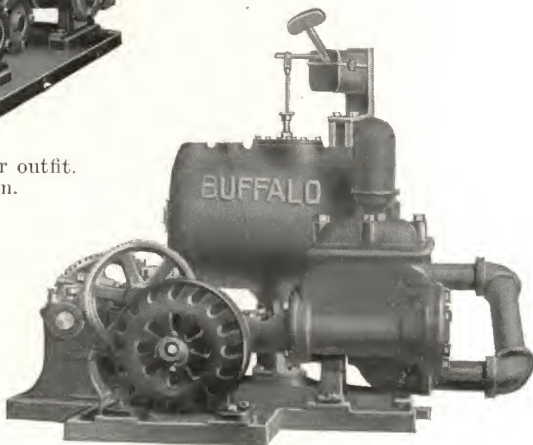


Fig. 717

Size,  $4 \times 6$



## Buffalo Duplex Automatic Feed Pumps and Receivers

The unit consists of a suitably constructed cast-iron receiving tank, mounted in combination with a Boiler Feed Pump on a common bed plate. The tank is mounted slightly above the pump, giving a sufficient head of water above the suction valves to insure the pump always receiving a full supply of water.

Within the tank is provided a float connected to a chronometer valve controlling the steam supply to the pump. Inflowing water causes float to rise, thereby opening the steam supply and starting the pump. When the water level has been lowered, the float automatically cuts off the steam. In this way the condensation water is returned to the boiler as fast as it accumulates.

State pumping head and electrical current available for Electric Condensation Return Pumps.

Diameter Steam Cylinders	Diameter Water Pistons	Length of Stroke	Pump Capacity Galls. Minute	Minimum Steam Pressure to Operate Pump	Sq. Feet Radiator Surface Apparatus Will Drain	Approximate Width and Length Inches	Number Openings in Receiver for Return Drip	Sized Tapped Openings Top of Receiver for Return Drip	Brass Fitted Code Word
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**With standard boiler feeders. Fig. 712**

3	2	3½	10	50	5000	24x30	1	2½	<i>Dcnir</i>
4½	2¾	4	20	40	10000	32x46	2	2½	<i>Dcnli</i>
5¼	3½	5	40	35	20000	34x54	3	2½	<i>Dcnow</i>
5¼	3½	6	45	35	25000	34x54	3	2½	<i>Dcnsv</i>
6	4	6	60	35	40000	34x54	3	2½	<i>Dcntu</i>
7	4	8	80	30	50000	40x65	3	2½	<i>Dcnux</i>
7½	4½	8	100	30	60000	40x65	3	2½	<i>Dcnxy</i>

**With low-steam pressure pumps. Similar to Fig. 712**

3	1½	3½	6	30	3000	24x30	1	2½	<i>Dcnyz</i>
4½	2	4	11	25	6000	32x46	2	2½	<i>Dcoct</i>
6	2	6	16	10	9000	34x54	3	2½	<i>Dcolf</i>
7½	2½	6	25	10	15000	38x56	3	2½	<i>Dcoms</i>

**With outside center-packed pumps. Fig. 714**

4½	2¾	4	20	40	10000	32x52	2	2½	<i>Dcorg</i>
5¼	3½	6	45	35	25000	34x62	3	2½	<i>Dcosh</i>
6	4	6	60	35	40000	34x62	3	2½	<i>Dcoth</i>
7½	4½	10	100	30	60000	30x94	3	2½	<i>Dcpbt</i>

**With power pumps. Fig. 717**

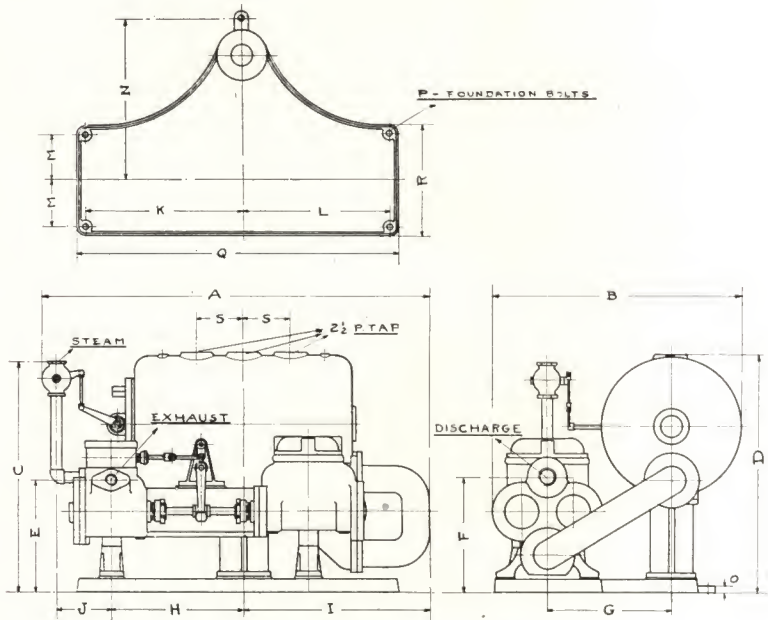
..	2	4	10	..	5000	Depends on Motor	3	2½	<i>Dcpde</i>
..	2¾	4	20	..	10000		3	2½	<i>Dcpfi</i>
..	3½	6	45	..	20000		3	2½	<i>Dcpiv</i>
..	4	6	60	..	40000		3	2½	<i>Dcplo</i>
..	4½	8	80	..	50000		3	2½	<i>Dcpox</i>





## Dimensions of Automatic Feed Pumps and Receivers

(Not certified for construction purposes.)



SIZE PUMP	STEAM			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
	INLET	EXHAUST	DISCHARGE																			
3x1 1/2 x 3 1/2	1	1	1	3-2	23	2-0 1/2	2-2	9 1/2	10 1/2	10 1/2	13 1/2	15 1/2	8	15 1/2	9 1/2	3 1/2	14 1/2	1	1	2	2-3	9 1/2
3x2 x 3 1/2	1	1	1	3-2	23	2-0 1/2	2-2	9 1/2	10 1/2	10 1/2	13 1/2	15 1/2	8	15 1/2	9 1/2	3 1/2	14 1/2	1	1	2	2-3	9 1/2
4 1/2 x 2 1/2 x 4	1	1 1/2	1 1/2	4-0	28 1/2	2-4	2-4 1/2	12 1/2	12 1/2	14 1/2	10 1/2	21 1/2	13 1/2	14 1/2	15 1/2	4 1/2	19 1/2	1	1	2	2-9	12 1/2
5 1/2 x 2 1/2 x 5	1	1	1	4-5	2-10 1/2	2-6	2-9 1/2	14 1/2	14 1/2	17	17 1/2	2-1	9	21 1/2	20 1/2	6 1/2	22	1	1	2	3-8 1/2	15 1/2
5 1/2 x 3 x 5	1	1	1	4-5	2-10 1/2	2-6	2-9 1/2	14 1/2	14 1/2	17	17 1/2	2-1	9	21 1/2	20 1/2	6 1/2	22	1	1	2	3-8 1/2	15 1/2
5 1/2 x 3 1/2 x 5	1	1	1	4-5	2-10 1/2	2-6	2-9 1/2	14 1/2	14 1/2	17	17 1/2	2-1	9	21 1/2	20 1/2	6 1/2	22	1	1	2	3-8 1/2	15 1/2
5 1/2 x 3 1/2 x 6	1	1 1/2	1 1/2	4-5	2-10 1/2	2-6	2-9 1/2	14 1/2	14 1/2	17	17 1/2	2-1	9	21 1/2	20 1/2	6 1/2	22	1	1	2	3-8 1/2	15 1/2
6 x 2 1/2 x 6	1	1 1/2	1 1/2	4-5 1/2	2-10 1/2	2-6	2-9 1/2	15 1/2	15 1/2	17	18 1/2	2-1 1/2	7 1/2	21 1/2	20 1/2	6 1/2	22	1	1	2	3-8 1/2	15 1/2
6 x 3 x 6	1	1 1/2	1 1/2	4-5 1/2	2-10 1/2	2-6	2-9 1/2	15 1/2	15 1/2	17	18 1/2	2-1 1/2	7 1/2	21 1/2	20 1/2	6 1/2	22	1	1	2	3-8 1/2	15 1/2
6 x 3 1/2 x 6	1	1 1/2	1 1/2	4-5 1/2	2-10 1/2	2-6	2-9 1/2	15 1/2	15 1/2	17	18 1/2	2-1 1/2	7 1/2	21 1/2	20 1/2	6 1/2	22	1	1	2	3-8 1/2	15 1/2
6 x 4 x 6	1	1 1/2	1 1/2	4-5 1/2	2-10 1/2	2-6	2-9 1/2	15 1/2	15 1/2	17	18 1/2	2-1 1/2	7 1/2	21 1/2	20 1/2	6 1/2	22	1	1	2	3-8 1/2	15 1/2
6 x 4 1/2 x 6	1	1 1/2	1 1/2	4-5 1/2	2-10 1/2	2-6	2-9 1/2	15 1/2	15 1/2	17	18 1/2	2-1 1/2	7 1/2	21 1/2	20 1/2	6 1/2	22	1	1	2	3-8 1/2	15 1/2
7 x 4 x 8	1	1	1	5-4	2-10 1/2	2-9 1/2	3-0	18 1/2	16 1/2	16	23 1/2	2-4 1/2	7 1/2	21 1/2	20 1/2	6 1/2	21	1	1	2	4-3	15 1/2
7 1/2 x 2 1/2 x 6	1 1/2	2	2	4-6	2-11 1/2	2-9 1/2	2-9 1/2	16	15 1/2	17	11 1/2	2-10	7 1/2	17 1/2	2-8 1/2	7 1/2	22	1	1	2	3-10	17 1/2
7 1/2 x 3 x 6	1 1/2	2	2	4-6	2-11 1/2	2-9 1/2	2-9 1/2	16	15 1/2	17	11 1/2	2-10	7 1/2	17 1/2	2-8 1/2	7 1/2	22	1	1	2	3-10	17 1/2
7 1/2 x 3 1/2 x 6	1 1/2	2	2	4-6	2-11 1/2	2-9 1/2	2-9 1/2	16	15 1/2	17	11 1/2	2-10	7 1/2	17 1/2	2-8 1/2	7 1/2	22	1	1	2	3-10	17 1/2
7 1/2 x 5 x 8	1 1/2	2	2	5-4 1/2	3-3 1/2	2-9 1/2	2-10 1/2	16 1/2	17 1/2	19	23 1/2	2-4 1/2	8 1/2	2-6 1/2	21	6 1/2	2-0	1	1	2	4-6	15 1/2
7 1/2 x 5 1/2 x 8	1 1/2	2	2	5-4 1/2	3-3 1/2	2-9 1/2	2-10 1/2	16 1/2	17 1/2	19	23 1/2	2-4 1/2	8 1/2	2-6 1/2	21	6 1/2	2-0	1	1	2	4-6	15 1/2



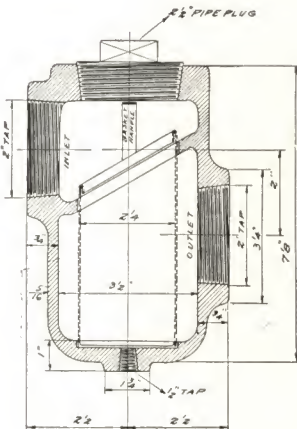
# Buffalo Centrifugal Condensation Return Pumps



Data required: When sending inquiry, state amount radiation, whether direct or indirect, or pounds condensation per hour to be handled; maximum boiler pressure carried; elevation between foundations for pump and water level in boiler and distance between pump and boiler, i. e., length pipe. Also state electric current available for motor.

Specifications given on next page.

**Fig. 1207**  
**Size 1 ½ inch Centrifugal Condensation Return Pump**  
*(Note outline dimensions on Page 8.)*



**Fig. 1086**

A Buffalo Return Line Strainer (Fig. 1086) should be used, on all return lines to vacuum pumps or pump and receiver outfit to catch pipe scale, etc. Prices on request.

Note: Vertical Shaft Condensation Return  
Pumps listed on page 7.



# Buffalo Centrifugal Condensation Return Pumps

## SPECIFICATIONS.

(Note dimensions on page 8.)

**Type:** Is to be similar to Fig. 1207, consisting of 40 gallon cast iron receiving tank with three 2½-inch tapped inlets for return and vent pipes and a small centrifugal pump direct connected to electric motor controlled by a float switch mounted on top of receiver governed by 10-inch seamless blown spherical copper float within the receiver. Entire outfit is to be mounted on cast iron base and drip pan. Gauge glass furnished on receiver.

**Capacity:** This pump is to have a capacity of ..... gallons of water per minute when discharging against a total head, including pipe friction losses of ..... feet, and is to be direct connected to motor operating at ..... R. P. M., actual running speed. The entire outfit is to return condensation from heating system to a low pressure heating boiler operating on ..... lbs. maximum steam pressure.

It will be noted that a margin in pumping head has been allowed above actual boiler pressure plus elevation from pump to boiler and pipe friction so that pump will feed boiler easily.

Floor pace:	Outfit	Size Pump Discharge	Approximate Floor Space Width and Length	Shipping Weight Without Motor	Code Word with Motor & Automatic Starter	Code Word without Electrical Equipment
	"A"	1 "	4' x 2'-6"	1,000 lbs.	<i>Dcft</i>	<i>Dcbfu</i>
	"B"	1½"	4' x 2'-7"	1,050 lbs.	<i>Dcbl</i>	<i>Dcbij</i>
	"C"	2 "	4' x 2'-9"	1,100 lbs.	<i>Dcark</i>	<i>Dcbij</i>
	"D"	2½"	4'-3" x 3'-1"	1,250 lbs.	<i>Dcbag</i>	<i>Dcbma</i>
	"E"	3 "	4'-6" x 3'-3"	1,450 lbs.	<i>Dcbch</i>	<i>Dcbok</i>

**NOTE:** In order to quote we must have capacity desired, total head and what electric current is available.

**Pump:** To have cast iron shell, with ..... inch discharge opening, removable side-plate and brass impeller for hot water service. Pump is to be direct connected to motor by suitable coupling supplied by Buffalo Steam Pump Co.

**Electrical Equipment:** Motor is to be .... H. P. .... and is to be controlled by ..... pole enclosed pattern General Electric Co. automatic float switch.

(No electric wiring is furnished by Buffalo Steam Pump Co.)

## Data For Outfits Operating at 35 Feet Total Head.

The following being figured for 35 feet head will not apply to all installations, but is given as a guide in selecting outfit.

H. P. Motor	Usual R. P. M.	OUTFIT "A"		OUTFIT "B"		OUTFIT "C"	
		Pounds Hour Conden- sation	Sq. Ft. Direct Radiation	Pounds Hour Conden- sation	Sq. Ft. Direct Radiation	Pounds Hour Conden- sation	Sq. Ft. Direct Radiation
1	3400	4000	8000	.....	.....	.....	.....
1	1700	.....	.....	6500	13000	.....	.....
1	1150	.....	.....	.....	.....	5500	9000
1½	1700	.....	.....	8500	17000	10000	20000
1½	1150	.....	.....	.....	.....	8000	16000
2	1700	.....	.....	.....	.....	14000	28000
2	1150	.....	.....	.....	.....	14000	28000

Data for larger capacities at higher or lower heads on request.

"Total Head" of 35 feet is based on 10 lbs. maximum boiler pressure plus pump to boiler water level plus pipe friction plus 20% margin so as to feed boiler easily.

"Lbs. per Hour Condensation" is based on pump operating 20 minutes out of 60.

"Sq. Ft. Direct Radiation" is based on a maximum condensation of 0.5 lb. per sq. ft. per hour.

Indirect Radiation as in fan systems of heating is generally considered to condense 1.2—2.3 lbs. per sq. ft. per hour.





B U F F A L O P U M P S



# Buffalo Vertical Centrifugal Condensation Return Pumps

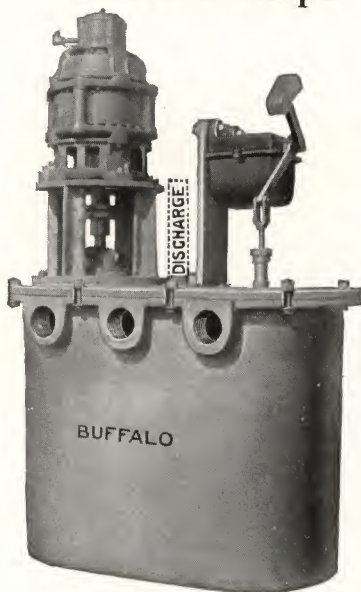


Fig. 1208

Size 1½ inch Vertical Centrifugal Condensation Return Pump

(Note outline dimensions on Page 8)

A Buffalo Vertical Centrifugal Condensation return pump in its scheme of operation is similar in every way to the ordinary horizontal shaft outfit illustrated by Fig. 1207 except, that the pump is vertical and submerged within the receiver. The motor is controlled by means of a 10" seamless copper float, operating a float switch. This style of design is more convenient in many installations as it avoids providing large pit to carry the pump in order to get it sufficiently low to admit gravity drainage.

The vertical outfit is built only in two sizes, G and H, having respectively 1" and 1½" discharge opening. These pumps have brass impellers

When sending inquiries state amount of radiation, whether direct or indirect, or pounds of condensation per hour to be handled; maximum boiler pressure carried; elevation between pump and water level in boiler; distance between pump and boiler, i. e., length of pipe. Also state electric current available for motor.

## Data for Outfits Operating at 35 feet Total Head.

The following being figured for 35 feet head will not apply to all installations but is given as a guide in selecting outfit.

H. P. Motor	Usual R. P. M.	OUTFIT "G"		OUTFIT "H"		Shipping Weight Without Motor.	Code Word With Motor and Automatic Starter.	Code Word Without Electrical Equipment
		Pounds Hour Condensation	Sq. Ft. Direct Radiation	Pounds Hour Condensation	Sq. Ft. Direct Radiation			
1	3400	4000	8000	6500	13000	Outfit "G", 850 lbs.	Outfit "G", Dibcah	Outfit "G", Dibeka
1	1700					Outfit "H", 900 lbs.	Outfit "H", Dibchu	Outfit "H", Dibene
1	1150							
1½	1700			8500	17000			

Prices depend on size motor and kind of electric current available.

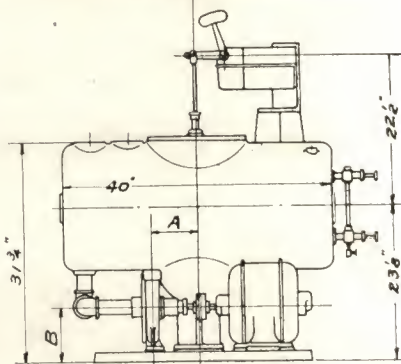
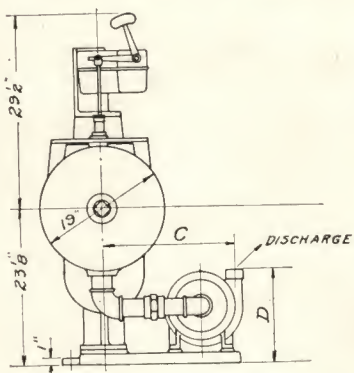
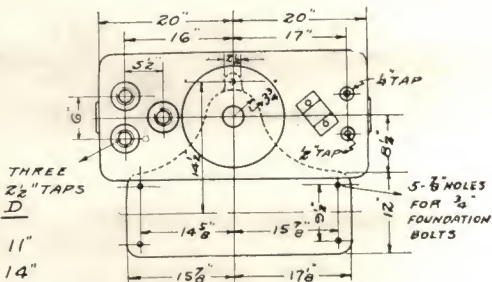


# BUFFALO PUMPS

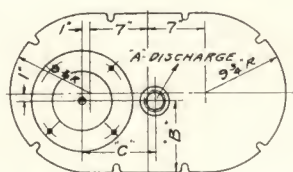


"BUFFALO" FIG. 1207  
CONDENSATION PUMP

SIZE DISCHARGE	A	B	C	D
1"	7 $\frac{7}{8}$ "	7"	18 $\frac{3}{8}$ "	11"
1 $\frac{1}{2}$ "	6 $\frac{5}{8}$ "	8 $\frac{1}{4}$ "	19 $\frac{5}{8}$ "	14"

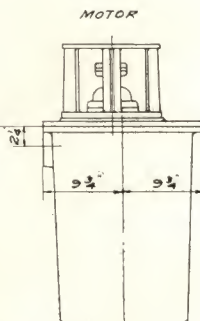
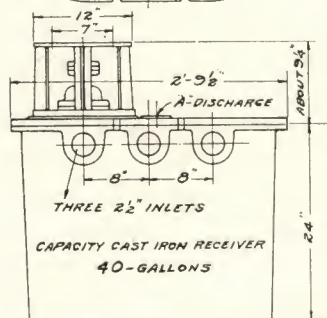


(Above Pumps Listed on Page 6)



"BUFFALO" FIG. 1208  
CONDENSATION PUMP

OUTFIT	A	B	C
# 1	1"	8 $\frac{3}{4}$ "	8 $\frac{1}{2}$ "
# 1 $\frac{1}{2}$	1 $\frac{1}{2}$ "	8 $\frac{3}{4}$ "	8 $\frac{1}{2}$ "



(Above Pumps Listed on Page 7)